

National Aeronautics and
Space Administration
Lyndon B. Johnson Space Center
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October 7, 2004

Reply to Attn of: EA-04-034

TO: Goddard Space Flight Center
Attn: 552/Branch Head, Cryogenics and Fluids Branch

FROM: EA/AMS Deputy Project Manager

SUBJECT: Certification Testing of the AMS-02 Cryocooler Assemblies

The AMS-02 Project Office has reviewed the test results for the certification vibration test of the Cryocooler units on July 13-15, 2004. Specifically, we have reviewed the notching of the input spectra was done to minimize certain unrealistic responses within the qual unit. In our opinion, the notching was minor and did not produce a significant reduction in the overall grms level applied to the part.

Although this level was slightly lower than the original design requirement, that requirement was conservative and will be re-evaluated based on the results of the Vacuum Case Acoustic Test, which is currently scheduled for February of 2006. The cryocooler qualification level, even with the notching, is expected to envelope the response levels seen during this test by a wide margin. The risk that these levels would be exceeded is trivial and is acceptable to the AMS-02 Project Office.

We have had preliminary discussions with the JSC Structures Working Group about this issue and they have not expressed any concerns with this approach. We are working with them to get a formal memo released. This will be provided to GSFC as soon as we receive it. In the meantime, we see no reason to delay the Critical Design Review and consider the current design fully qualified.

A handwritten signature in black ink, appearing to read "Trent D. Martin". The signature is fluid and stylized, with a large, sweeping "T" and a long, horizontal stroke at the end.

Trent D. Martin

cc:
GSFC/420.2/L. Hartz
GSFC/552/K. Shirey
LMSO/C102/C. Tutt
LMSO/C102/P. Nemeth
LMSO/C102/M. Fohey
LMSO/C102/D. Cox